

What is claimed is:

1. A filter assembly for a cyclone type dust collecting apparatus of a vacuum cleaner, the cyclone type dust collecting apparatus which centrifugally separates contaminants from an externally-drawn air and collects the separated contaminants therein, the filter assembly for  
5 filtering contaminants floating in an air which is discharged through an exhaust port of the vacuum cleaner, comprising:

a rotary filter rotatably connected with respect to the exhaust port of the cyclone type dust collecting apparatus, the rotary filter including a suction grill portion disposed at the outer circumference and a discharge port in fluid communication with the exhaust port; and

10 a filter rotating unit for rotating the rotary filter within the dust collecting apparatus, thereby removing the contaminants filtered on the suction grill portion and depositing them into a removable dust receptacle engaged to the cyclone type dust collecting apparatus.

2. The filter assembly of claim 1, wherein the filter rotating unit comprises:

15 a connecting portion open in a downward direction with respect to an axis of the rotary filter;

an operating bar extending upwardly from the bottom of the dust receptacle of the cyclone type dust collecting apparatus, for operating in association with the connecting portion of the rotary filter; and

a rotation driving portion, disposed between the operating bar and the connecting portion, capable of rotating the rotary filter in association with the engagement and disengagement of the dust receptacle.

5           3. The filter assembly of claim 2, wherein the rotation driving portion comprises:

an operating groove formed on an outer surface of the operating bar extending along a lengthwise direction in a helical, screw-wise pattern; and

a driven protrusion formed in the connecting portion corresponding to the operating groove and oriented with respect to the operating groove, whereby engagement of the groove  
10 with the protrusion causes the rotation of the rotary filter.

4. The filter assembly of claim 2, further comprising an operating bar guide protruding downwardly from the connecting portion of the rotary filter and having a divergent surface toward the operating bar.

15           5. The filter assembly of claim 3, further comprising an operating bar guide protruding downwardly from the connecting portion of the rotary filter and having a divergent surface toward the operating bar.

20           6. The filter assembly of claim 1, further comprising a rotation supporting portion disposed between the exhaust port and the rotary filter, for rotatably supporting the rotary filter.

7. The filter assembly of claim 1, further comprising a brush portion disposed adjacent an outer portion of the rotary filter for removing the contaminant filtered on the suction grill portion.

5           8. The filter assembly of claim 6, further comprising a brush portion disposed adjacent an outer portion of the rotary filter for removing the contaminant filtered on the suction grill portion.

9. The filter assembly of claim 8, wherein the brush portion is formed on the rotation supporting portion.

10           10. The filter assembly of claim 1, further comprising a filtering member disposed on the suction grill portion of the rotary filter.

11.       The filter assembly of claim 2, wherein the rotation driving portion comprises:

15           an operating protrusion formed on an outer surface of the operating bar along a lengthwise direction and in a helical, screw-wise pattern; and

          a driven groove formed in the connecting portion corresponding to the operating protrusion, whereby engagement of the groove with the protrusion causes the rotation of the rotary filter.

12. A filter assembly for use in a cyclone type dust collecting apparatus of a vacuum cleaner capable of filtering contaminants centrifugally separated from cyclonic air swirling within a dust receptacle, the cyclone type dust collecting apparatus having an exhaust port, the filter assembly comprising:

5 a cylindrical rotary filter, rotatably connected with respect to the exhaust port of the cyclone type dust collecting apparatus, including a suction grill portion disposed at the outer circumference of the rotary filter and a discharge port in fluid communication with the exhaust port; and

a filter rotating unit for rotating the rotary filter, whereby rotation of the rotary filter by  
10 the filter rotating unit results in removal of contaminants filtered by the suction grill portion.

13. The filter assembly of claim 12, wherein the filter rotating unit comprises:

a connecting portion opened in a downward direction with respect to an axis of the rotary filter;

15 an operating bar extending upwardly from the bottom of the dust receptacle of the cyclone type dust collecting apparatus, for operating in association with the connecting portion of the rotary filter; and

a rotation driving portion, disposed between the operating bar and the connecting portion, capable of rotating the rotary filter in association with the engagement and disengagement of the  
20 dust receptacle.

14. The filter assembly of claim 13, wherein the rotation driving portion comprises:

an operating groove formed on an outer surface of the operating bar extending along a lengthwise direction in a helical, screw-wise pattern; and

5 a driven protrusion formed in the connecting portion corresponding to the operating groove and oriented with respect to the operating groove, whereby engagement of the groove with the protrusion causes the rotation of the rotary filter.

15. The filter assembly of claim 13, wherein the rotation driving portion comprises:

10 an operating protrusion formed on an outer surface of the operating bar along a lengthwise direction and in a helical, screw-wise pattern; and

a driven groove formed in the connecting portion corresponding to the operating protrusion, whereby engagement of the groove with the protrusion causes the rotation of the rotary filter.

15 16. The filter assembly of claim 13, further comprising a flared operating bar guide protruding downwardly from the connecting portion of the rotary filter and having a divergent surface toward the operating bar.

17. The filter assembly of claim 12, further comprising a rotation supporting portion  
20 disposed between the exhaust port and the rotary filter, for rotatably supporting the rotary filter.

18. The filter assembly of claim 12, further comprising a brush portion disposed adjacent an outer portion of the rotary filter for removing the contaminant filtered on the suction grill portion.

5           19. The filter assembly of claim 17, further comprising a brush portion disposed adjacent an outer portion of the rotary filter for removing the contaminant filtered on the suction grill portion.

10           20. The filter assembly of claim 19, wherein the brush portion is formed on the rotation supporting portion.